

## CLAIMS

1. A process for manufacturing a solar cell foil comprising the steps of:
  - providing an etchable temporary substrate
  - 5       • applying a front electrode of a transparent conductive oxide (TCO) onto the temporary substrate
  - applying a photovoltaic layer onto the TCO layer
  - applying a back electrode layer
  - applying a permanent carrier
  - 10       • ensuring that the front electrode and the back electrode are electrically connected in an interconnect to establish a series connection, the front and the back electrode each being interrupted by front and back groove, respectively, at different sides of the interconnect
  - 15       • in any one of the preceding steps providing an etch resist on the non-TCO side of the temporary substrate at least at the location of the interconnect, and at least not at the entire location of the front groove
  - selectively removing the temporary substrate where it is not
  - 20       covered with etch resist.
2. The process of claim 1, wherein the step of applying the etch resist on the non-TCO side of the temporary substrate is performed directly before the step of selectively removing the temporary substrate where it is not
- 25       covered with etch resist.
3. The process of claim 1 or 2, wherein the etch resist is a permanent etch resist.

4. The process of claim 3, wherein the color of the etch resist is selected such that it matches or contrasts with the color of the energy-generating part of the solar cell unit.
- 5 5. The process of claim 1 or 2, wherein the etch resist is a temporary etch resist.
6. The process of any of the preceding claims which is carried out in a roll-to-roll process.
- 10 7. A solar cell unit comprising a front electrode, a PV layer, and a back electrode layer, wherein the solar cell unit is divided into at least two individual cells connected in series, the series connection comprising an interconnect which electrically connects the front electrode of one cell with the back electrode of an adjacent cell, while the front and the back electrode are each interrupted at different sides of the interconnect, in  
15 which solar cell unit a protective cap is present on the front electrode at the location of the interconnect, with the protective cap being of a different material than the interconnect.
- 20 8. The solar cell unit of claim 7 which is a flexible solar cell foil suitable for handling in a roll-to roll process.